UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte ERIC GAUSSIER, FRANCINE CHEN,
and ASHOK CHHABEDIA POPAT

_____

Appeal 2008-2065
Application 09/982,236
Technology Center 2100

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Decided: January 8, 2009

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Before LANCE LEONARD BARRY, ST. JOHN COURTENAY III, and
THU A. DANG, *Administrative Patent Judges.*

DANG, *Administrative Patent Judge.*

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of
claims 1-26. We have jurisdiction under 35 U.S.C. § 6(b).

A. INVENTION

According to Appellants, the invention relates to hierarchical clustering of objects, and more particularly, to soft hierarchical clustering of objects based on a co-occurrence of object pairs (Spec. 1, [001]).

B. ILLUSTRATIVE CLAIM

Claim 1 is exemplary and is reproduced below:

1. A method performed by a computer for clustering a plurality of documents in a structure comprised of a plurality of clusters hierarchically organized, wherein each document includes a plurality of words and is represented as a set of (document, word) pairs, the method comprising:

accessing the document collection;

performing a clustering process that creates a hierarchy of clusters that reflects a segregation of the documents in the collection based on the words included in the documents, wherein any document in the collection may be assigned to a first cluster in the hierarchy based on a first segment of the respective document, and the respective document may be assigned to a second cluster in the hierarchy based on a second segment of the respective document, wherein the first and second clusters are associated with different paths of the hierarchy;

storing a representation of the hierarchy of clusters in a memory; and

making the representation available to an entity in response to a request associated with the document collection.

C. REJECTIONS

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Heckerman   US 6,742,003 B2   May 25, 2004
Fohn   US 6,460,025 B1   Oct. 1, 2002

Claims 1-26 stand rejected under 35 U.S.C. § 103(a) over the teachings of Heckerman and Fohn.

We AFFIRM.

II. ISSUES

Have Appellants shown that the Examiner erred in concluding that claims 1-26 are unpatentable under 35 U.S.C. § 103(a) over the teachings of Heckerman and Fohn? In particular, the issues turn on whether:

1) the combined teachings of Heckerman and Fohn disclose or suggest "performing a clustering process that creates a hierarchy of clusters that reflects a segregation of the documents in the collection based on the words included in the documents, wherein any document in the collection may be assigned to a first cluster in the hierarchy based on a first segment of the respective document, and the respective document may be assigned to a second cluster in the hierarchy based on a second segment of the respective document" (claim 1);

2) one of ordinary skill in the art would have found it obvious to combine Heckerman and Fohn.

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Heckerman

1. Heckerman discloses a system for visualizing clusters (categories) and segments (summarized clusters) of data, wherein the system automatically categorizes incoming case data into clusters, summarizes those clusters into segments, determines similarity measures for the segments, and then forms and visually depicts hierarchical organizations of those selected clusters (Abstract).

2. The system allows the data analyst to control combining and splitting of categories, wherein the data analyst combines categories that are most similar and splits categories that have been combined (col. 10, ll. 5-10).

3. The system creates a hierarchical map by starting with the base categories, and successively and iteratively combining the most similar categories in order to generate combined categories until a single combined category contains all the records of the collection (col. 10, ll. 48-52).

Fohn

4.   Fohn discloses calculating entity relevance for the entities in the hierarchies of information to be used to guide the user in his exploration, wherein the state relevance is dynamically computed, as the user selects nodes or categories during exploration and each selection serves to further constrain the solution space (Abstract).

5.   Entities are common to hierarchies of separate root nodes, and traversing from one root node to another root node would therefore not yield an empty solution state (col. 14, ll. 51-56, Fig. 4).

6.   Catalog exploration uses category (i.e. node) hierarchy, and has associated products (i.e., entities), wherein each hierarchy offers a different perspective on the product set: one hierarchy classifies the product according to an application, or type of use, perspective; one hierarchy classifies the product according to an operating conditions perspective; and another hierarchy classifies the product according to other operating conditions perspective (col. 20, ll. 51-63; Figs. 6A-6C).

IV. PRINCIPLES OF LAW

"Our analysis begins with construing the claim limitations at issue." *Ex Parte Filatov*, No. 2006-1160, 2007 WL 1317144, at *2 (BPAI 2007). "[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d

1367, 1372 (Fed. Cir. 2000)). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989)).

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

> Section 103 forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1734 (2007).

The Supreme Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* The operative question in this "functional approach" is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 1740.

"Under the correct analysis, any need or problem known in the field and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Id.* at 1742. The Court noted that "[c]ommon sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the

teachings of multiple patents together like pieces of a puzzle." *KSR*, 127 S. Ct. at 1742. "A person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.*

The Federal Circuit recently recognized that "[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not." *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (citing *KSR*, 127 S. Ct. at 1739). The Federal Circuit relied in part on the fact that Leapfrog had presented no evidence that the inclusion of a reader in the combined device was "uniquely challenging or difficult for one of ordinary skill in the art" or "represented an unobvious step over the prior art." *Id.* at 1162 (citing *KSR*, 127 S. Ct. at 1741).

V. ANALYSIS

Rejection under U.S.C. § 103(a)

<u>*Whether each argued claim limitation is found in the prior art teachings:*</u>

Appellants do not provide separate arguments with respect to the rejection of claims 1-26. Therefore, we select independent claim 1 as being representative of the cited claims. 37 C.F.R. § 41.37(c)(1)(vii).

Appellants contend that the "the claimed invention requires that the documents used to create the hierarchy of clusters are the <u>same documents</u> that can be assigned to both first and second clusters of the hierarchy of clusters" (App. Br. 19) and thus "<u>Heckerman fails to disclose, teach, or suggest the ability to assign</u> documents to both first and second clusters based on segments within the same documents used to create the hierarchy of clusters" (*Id.*). Appellants further contend that "Fohn fails to teach, suggest, or disclose the ability to <u>assign documents to both first and second clusters based on segments within the same documents used to create the hierarchy of clusters</u>" (App. Br. 20). Contrary to the Appellants' assertions, the Examiner finds that the combination of Heckerman in view of Fohn discloses the claimed limitations (Ans. 2-4).

We note that Appellants' argument is not commensurate with the claimed invention, since the claims do not recite "the *same* documents that can be assigned to *both* first and second clusters" or "the ability to assign" as the Appellants contend. Therefore, an issue we address on appeal is whether the combined teaching of Heckerman and Fohn discloses "performing a clustering process that creates a hierarchy of clusters that reflects a segregation of the documents in the collection based on the words included in the documents, wherein any document in the collection may be assigned to a first cluster in the hierarchy based on a first segment of the respective

document, and the respective document may be assigned to a second cluster in the hierarchy based on a second segment of the respective document" (claim 1).

We begin our analysis by giving the claims their broadest reasonable interpretation. *See In re Bigio* at 1324. Furthermore, our analysis will not read limitations into the claims from the Specification. *See In re Van Geuns* at 1184. Appellants' claims simply do not place any limitation on what the term "may be assigned" is to be, to represent, or to mean, other than that any document in the collection "*may be* assigned to a first cluster in the hierarchy" and "*may be* assigned to a second cluster in the hierarchy."

Appellants appear to be arguing that, because Heckerman classifies the data records "into a plurality of '**mutually exclusive first clusters**'" (App. Br. 17), Heckerman does not disclose that the same document also *may be* assigned to a second cluster. That is, Appellants appear to be arguing that Heckerman does not disclose that the document *must be capable* of being assigned to a second cluster *at the same time* that it is assigned mutually exclusively to the first cluster. However, our analysis will not read such "must be capable" or "at the same time" or the lack of "mutually exclusive" language into the claims. In fact, we find that the "may be" language does not even require that such "assigned to the first cluster" or "assigned to the second cluster" must be read into the claims since the claims recite that such assignment is merely a possibility, i.e., "may be" (as well as "may not be").

We generally agree with the Examiner's finding that the combined teaching of Heckerman and Fohn discloses and/or suggests the claimed elements on appeal beginning at page 2 of the Answer, and the Examiner's corresponding responsive arguments beginning at page 6 of the Answer.

Heckerman teaches categorizing incoming case data into clusters, summarizing those clusters into segments, determining similarity measures for the segments, and then forming and visually depicting hierarchical organizations of those selected clusters, wherein the hierarchical map is created by starting with the base categories (FF 1-3). Fohn discloses calculating entity relevance for the entities in the hierarchies of information to be used to guide the user in his exploration, wherein the entities are common to hierarchies of separate root nodes (FF 4-6). We find the process of Heckerman to be a clustering process that creates a hierarchy of clusters. Further, we find the hierarchy of clusters of Fohn to be a hierarchy in which an entity may be assigned to different clusters based on the attributes/segments of the entity.

Though Appellants appear to be arguing that Heckerman or Fohn alone fails to disclose the claim limitation, the Examiner has rejected the claims based on the combination of Heckerman and Fohn, and nonobviousness cannot be shown by attacking the references individually. We thus agree with the Examiner's finding that the combined teachings of Heckerman and Fohn would disclose or at the least strongly suggest "performing a clustering process that creates a hierarchy of clusters that

reflects a segregation of the documents in the collection based on the words included in the documents, wherein any document in the collection may be assigned to a first cluster in the hierarchy based on a first segment of the respective document, and the respective document may be assigned to a second cluster in the hierarchy based on a second segment of the respective document," as recited in claim 1. An artisan would have been able to fit the teachings of Heckerman and Fohn together like pieces of a puzzle because person of ordinary skill is also a person of ordinary creativity, not an automaton. *See KSR*, 127 S. Ct. at 1742.

Though Appellants argue in the Reply Brief that "Fohn fails to disclose 'assigning documents to both first and second clusters based on segments within the same documents used to create the hierarchy of clusters'" (Reply Br. 4), as discussed above, such argument is not commensurate with the claim invention. Further, the Examiner has rejected the claim based on the combined teachings of Heckerman and Fohn, not just over Fohn alone. We agree with the Examiner that Heckerman discloses using the documents to create a hierarchy of clusters, while Fohn discloses that the documents may be assigned to first and second clusters. An artisan would have found it obvious that, in order to create a hierarchy of clusters wherein the documents are assigned to a plurality of clusters as taught by the combined teaching of Heckerman and Fohn, the documents assigned to the plurality of clusters are used in the creation of the hierarchy.

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As to claim 8, Appellants further argue that "Fohn does not assign entities to nodes because these nodes and entities already have a pre-existing relationship," and that "Heckerman only assigns a record to **one** of several clusters" (App. Br. 21). However, as discussed above, the Examiner has not rejected the claims just over Heckerman or Fohn alone. We find that Heckerman discloses using the documents to create a hierarchy of clusters that is not an already pre-existing relationship, while Fohn discloses that the records may be assigned to several clusters. An artisan would have understood that, in creating a hierarchy of clusters with entities assigned to a plurality of clusters as taught by the combined teaching of Heckerman and Fohn, the relationship does not yet pre-exist.

Accordingly, we conclude that Appellants have not shown that the Examiner erred in finding all elements of the claimed invention are disclosed or suggested by the combined teaching of Heckerman and Fohn.

Whether one of ordinary skill in the art would have found it obvious to combine the prior art teachings:

Appellants argue that "one of ordinary skill in the art would not have a reason to combine Fohn into Heckerman to form the claimed invention" (App. Br. 22). Therefore, another issue we address is whether the Appellants have shown error in the Examiner's findings that one of ordinary skill in the art would have found it obvious to combine the teachings of Heckerman and Fohn.

The Examiner's finding that it would have been obvious to combine Heckerman and Fohn beginning at page 4 of the Answer, and the corresponding argument beginning at page 7 of the Answer, comply with the requirements of the above-noted case law. Heckerman discloses clustering documents (FF 1-3). Fohn discloses entities belonging to multiple clusters based on their attributes (FF 4-6). We thus agree with the Examiner's finding that one of ordinary skill in the art would have incorporated the multiple clusters having common entities of Heckerman to the clustering process of Fohn, because "the combination would 'provide a powerful flexible technique for locating entities in a large information space using hierarchical navigation and browsing of these one or more hierarchies'" (Ans. 7-9).

Appellants have provided no evidence that incorporating Heckerman to Fohn was "uniquely challenging or difficult for one of ordinary skill in the art," *Leapfrog,* 485 F.3d 1157, 1162 (Fed. Cir. 2007) nor have Appellants presented evidence that this incorporation yielded more than expected results. Rather, we find that Appellants claimed invention is simply an arrangement of the known teaching of clustering to the known teaching of clusters having common entities. "[W]hen a patent 'simply arranges old elements with each performing the same function it had been known to perform' and yields no more than one would expect from such an arrangement, the combination is obvious." *KSR,* 127 S. Ct. at 1740 (citing *Sakraida v. AG Pro, Inc.,* 425 U. S. 273, 282 (1976)).

Accordingly, we conclude that the Appellants have not shown that the Examiner erred in rejecting claim 1, and claims 2-26 falling with claim 1, under 35 U.S.C. § 103(a).

CONCLUSION OF LAW

(1) Appellants have not shown that the Examiner erred in finding that claims 1-26 are unpatentable under 35 U.S.C. § 103(a) over the teachings of Heckerman and Fohn.

(2) Claims 1-26 are not patentable.

DECISION

The Examiner's rejection of claims 1-26 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

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